20 Winning hearts and minds: Implementing Activity Led Learning (ALL)

Sarah Wilson-Medhurst and Irene Glendinning,
Faculty of Engineering and Computing, Coventry University, Priory St, Coventry, CV1 5FB, UK. E-mail: Sarah.Wilson-Medhurst@coventry.ac.uk

Abstract

A faculty of Engineering and Computing (EC) in a UK university is investing in innovative approaches to both student support and pedagogy. The Faculty courses cover a diverse range of discipline areas, within the broad definition of the Engineering and Computing spectrum, with over 4000 students currently enrolled. Significant funding has been secured to develop prestigious new and enhanced building (learning) facilities, appropriately designed to accommodate the Faculty's full adoption of an Activity Led Learning (ALL) approach by September 2011. This paper reports on transitional arrangements within the Faculty in preparation for 2011, not least how to influence the culture and attitudes of Faculty members. There is a focus on two key interrelated aspects of the Faculty's strategic direction. Firstly a programme of pilot ALL study programmes in different EC subject areas is being rolled out, developed and monitored during the 2008-9 academic year and beyond, coordinated through an advisory group. Secondly, the Student Experience Enhancement Unit (SEE-U) has been established within the Faculty, employing students in the role of Student Advocate, to improve support and guidance available and to encourage improvements to student-facing processes and systems. This paper documents how this initiative is being influenced by innovative practice in Universities in other parts of the world as well as the continuous improvement change management approach being adopted enhanced through change agents working 'in' the system.

Key words: Activity Led Learning, Student Experience Enhancement, Community of Practice, Community of Learners, Student Advocacy

Introduction

Coventry University's faculty of Engineering and Computing (EC) in the UK is investing in innovative approaches to both student support and pedagogy. The faculty courses cover a diverse range of discipline areas, within the broad definition of the Engineering and Computing spectrum, with over 4000 students currently enrolled**.** Significant funding has been secured to develop a prestigious central faculty building, appropriately designed to accommodate the Faculty's full adoption of an Activity Led Learning (ALL) approach by September 2011. The activities during the interim three years will be crucial for determining the long term success for all members of the EC faculty learning community.

The current challenges facing the faculty require awareness of both the staff and student perspectives during the evolution from 'old' to 'new'. It is important to encourage all Faculty staff to contribute to the policy decisions affecting future plans because only those people with enthusiasm will be suitably prepared and equipped to embrace and exploit opportunities of the new approaches. However there is an equally important goal of ensuring that any new initiatives will genuinely benefit students. Overarching the programme of pedagogical developments is the continuing requirement to improve the provision and effectiveness of support mechanisms encompassing all aspects of the student experience, for both the current student population and for the future.

This paper reports about transitional arrangements within the faculty in preparation for 2011, not least how to engage staff and students with the change process to achieve sustainable change. There is a focus on two key interrelated aspects of the Faculty's strategic direction. Firstly details are set out describing the programme of pilot ALL study programmes in different EC subject areas being rolled out and monitored during the 2008-9 academic year, coordinated through the Faculty's Learning, Teaching and Assessment (LTA) advisory group. Secondly, the Student Experience Enhancement Unit (SEE-U) has been established within the faculty, employing students in the role of student advocate, to improve support and guidance available and to encourage improvements to student-facing processes and systems.

The paper documents how the faculty's future direction is being influenced by Universities in different parts of the world, including USA, Australia and Finland, where innovative approaches to pedagogy and student support have been suc-

cessfully adopted. In this way the faculty policy is being developed by applying the experience, and building on success, of other Universities as well as benefiting from its own experiences. This consultation process is also helping to inform key decisions about resources and infrastructure requirements for the new faculty building.

The authors' contributions emanate from two different but complementary perspectives. As faculty Teaching Development Fellow the first author's key interest is in working with Faculty staff to build a community of ALL practitioners who actively contribute to defining and developing the concepts and practicalities of ALL. The second author leads the faculty's SEE-U, and as such has an explicit focus on the student perspective of any changes affecting the faculty's learning and teaching provision. Both authors are focused on a continuous improvement approach to managing change involving consultation with, and involvement of, a wide range of people from the faculty's learning community including students, staff, and employer and professional body representatives.

Background to this initiative

As documented in Wilson-Medhurst et al, 2008 the Engineering and Computing (EC) faculty at Coventry wishes to maintain and develop its national and international reputation for high quality professionally focussed graduates and the learning experience that it provides. This through an innovative activity led learning culture, building on existing areas of good practice appropriately supported and aligned both to its building (learning) facilities and student facing systems and processes.

As indicated above, the faculty has a one-off opportunity, through a £60,000,000 project to create an environment planned and designed to support the delivery of this learning experience which will incorporate leading-edge learning and teaching practice. In summary the faculty's vision is to develop communities of learners through employer and profession focussed, activity led education. The key anticipated benefits of this approach include better engagement of students and staff in the learning experience, improved student retention and progression, increased graduate employment rates and greater staff and student satisfaction (see Wilson-Medhurst et al , 2008 for further details).

This vision acknowledges the explicit link between research and teaching. This with applied research (pedagogical) to inform teaching practice, and applied research (within discipline) to inform teaching, with parity between the two. Re-

searchers are also contributors to the teaching practice and part of the learning community.

To achieve the above the faculty requires an activity led learning culture and student focussed systems and processes that are fit for this purpose or vision. This paper focuses on exploring how the required culture shift is being achieved in these two key areas of the faculty's operation.

Activity Led Learning

As indicated above the learning and teaching (L&T) vision underpinning this initiative is to foster communities of learners engaged in employer and profession focussed activity led education. Currently there are pockets of Activity Led Learning (ALL) L&T activity within the faculty and the purpose of the faculty's L&T vision for an ALL pedagogy aligned to appropriate learning facilities is to have a more consistent ALL learning experience for all EC students. Fundamentally ALL involves students as active participants in the learning process with the tutor acting as facilitator rather than 'transmitter' of knowledge. This with the aim of promoting student retention, engagement and achievement, providing a more rewarding teaching experience for staff, and employers with the kind of graduates they would like to employ. Active learning experiences are more likely to have significant positive gains for the learner as the following quote from McCowan and Knapper, 2002, p. 633 attests:

"Learning in a passive system has a much greater tendency to be both superficial and quickly forgotten. Active involvement in learning helps the student to develop the skills of self-learning while at the same time contributing to a deeper, longer lasting knowledge of the theoretical material…..[and] …it is almost the only effective way to develop professional skills and to realise the integration of material from different sources."

As early as 1949 educationalists were observing that "learning takes place through the active behaviour of the student: it is what [s/]*he* does that [s/]he learns, not what the teacher does" (Tyler, 1949)

Activity Led Learning is therefore intended to be a pedagogy for engagement and to promote transformational learning. An initial working definition of ALL was posed in Wilson-Medhurst et al, 2008 and is revised as below.

> Activity Led Learning is a pedagogy in which the activity is the focal point of the learning experience and the tutor acts as a facilitator. An activity is a problem, project, scenario, case-study, research question or similar in a

> classroom, work-based, laboratory-based or other educational setting and for which there are a range of possible solutions or responses. Activities may cross subject boundaries, as activities within professional practice often do.
>
> Activity Led Learning requires a self-directed inquiry or research-like process in which the individual learner, or team of learners, seek and apply relevant knowledge, skilful practices, understanding and resources (personal and physical) relevant to the activity domain to achieve appropriate learning outcome(s) or intention(s). To be appropriate, the learning outcomes or intentions must be consistent with the aims, outcomes and intentions of the programme of study with which the student is engaged.

Levels of engagement with the ALL pedagogy will be reciprocally influenced by the attitudes, values and beliefs (understandings) of the staff and students involved. Initially staff must engage, but so too must students if the learning and teaching vision is to be achieved. More details of the early stages change management approach in relation to this vision is documented elsewhere (Wilson-Medhurst et al, 2008). This section of this paper outlines the initiative to nurture a community of ALL practitioners actively engaged in researching their ALL practice. The initial supporting framework for this community building activity is outlined in Wilson-Medhurst, 2008 and its alignment to Wenger's (Wenger, 1998) notion of a Community of Practice (CoP) is also explored there. Its significance in winning hearts and minds (influencing attitudes, values and beliefs) lies in its role within the change process as one of a number of enablers of change through which staff are engaged in shaping and developing their own ALL practice.

The initial focus for this CoP was the decision in late 2007 to set up a Learning Teaching and Assessment advisory group, reporting to the faculty Quality, Learning and Teaching committee. As documented in Wilson-Medhurst, 2008 this group chaired by the faculty Teaching Development Fellow has an explicit teaching quality enhancement remit especially supporting innovation in teaching, learning and assessment. To support research and evaluation activity around ALL innovation, the faculty provided funds to support a mini-project in one of each of the (then) faculty's seven departments. The LTA project leaders are members of the LTA advisory group. Thus there is a 'hub and spokes' structure supporting the CoP. At the 'hub', set within the context of the faculty's learning and teaching vision, there is the LTA advisory group, while the 'spokes' are the mini-projects. Mini-projects are shaped and defined by the participants (LTA project leader) with the support of the TDF and other members of the LTA group

as well other departmental staff in contact with the project. Effectively the project leaders become change agents working 'in' the system in a manner described by Seel, undated. Below is a list of LTA mini-projects running in 2008/9, they are all focussed at modular level.

Department*	LTA Project title
Built Environment (BE)	Involving part-time students in improving their own and full-time students' experience through 'contact with practice'
Computing and the Digital Environment (CDE)	Case study based teaching, learning and assessment methods to promote Student-Led Learning Improving the learning experience for first year students includes use of voting system technology
Engineering and Knowledge Management (EKM)	Development of project led learning approach to encourage student engagement Use of technology to support activity led pedagogy includes use of Just-in-time (JIT) lecture capture
Mechanical and Automotive Engineering (MAE)	Performance engineering challenge through Activity Led Learning
Mathematics, Statistics and Engineering Science (MSE)	Final form of project in progress but likely to relate to some aspect of the deployment of serious games to promote student engagement.

*NB two departments have two projects as a result of departmental reorganisation from August 2008 on.

Figure 1. EC LTA projects running in 2008/9

However since August 2008 the 'change process' has evolved to embrace other projects and new members have joined the LTA advisory group. A key project is a six week integrative first year activity led experience piloted by a team within the Mechanical and Automotive Engineering department led by the programme manager for mechanical engineering (see Green and Wilson-Medhurst, 2009). This demonstrates how this hub and spokes structure can evolve to support developments as they arise but all set within the context of an overarching L&T vision.

Student Experience Enhancement

The development of the new teaching and learning culture with the preparation for the move to new premises demanded a critical review of the entire ethos of the faculty. Establishing ALL as the pivotal pedagogy led to consideration of the impact of the changes on other aspects of student life. In Coventry as in many

universities, all too often it transpires that student-facing systems and processes within faculties, but also central university services, have been designed and organised for the convenience of administrative process rather than prioritising students' needs. However refocusing and remodelling the student services and support provision is no easy matter.

The adoption of a "customer service" approach to students in higher education has been the subject of much debate in recent years, for example Cooper argued that the complex relationships between provider and consumer in education make inappropriate any move towards commoditisation (Cooper, 2008). Conversely, it has been proposed that for England in particularly, the introduction of "top up fees" has made this inevitable to some extent (Maringe, 2008). It is clear from student surveys like the English National Union of Students (NUS) National Student Survey that students have high expectations about service provision. They are encouraged to make clear any dissatisfaction about negative experiences, through the various channels available. In recent years there has been a move towards engaging parents more during the admissions process, partly for providing reassurance, but also acknowledging that family members often provide essential financial support for students and seek evidence of potential value for money. The vast quantity of publicly available information and increasing use of university league tables, used to distinguish between HE providers in the UK, ensures that student satisfaction remains high on the agenda for all UK institutions.

In the light of the local and national situation described above, during 2008 the Student Experience Enhancement Unit (SEE-U) was conceptualised and then established in the faculty, becoming fully operational in October 2008. The SEE-U vision is to improve the provision of student services and support, both within the faculty and elsewhere in the University. The Unit was/is viewed as change-management vehicle for faculty student services, operating in conjunction with the faculty's LTA Advisory Group. SEE-U is concerned with any aspect of the student experience for all categories of faculty students.

The concept of the Student Journey and the Student Road Map (Glendinning et al, 2008), defined both breadth and depth of the Unit's remit. In summary the faculty believes that it is important to ensure that all members of the learning community have a rewarding experience and positive impression of the faculty and the University throughout their involvement in whatever role or stage, starting with first contact, persisting beyond graduation and employment. SEE-U was established as the driving force to promote this ethos. Currently SEE-U is

the only provision of its type at faculty level within the University, although there are centrally based University services that overlap with part of the Unit's remit.

The Unit is staffed by three full-time staff and a team of Student Advocates. The three full-time members of the team, Finance Liaison Officer, Faculty Assistant Registrar and Academic Manager Student Experience, each normally takes the lead on issues within their area of expertise, but the team operates together to provide mutual support and to build the intelligence. The Advocate team currently consists of nine carefully selected students, one PhD student, seven taught postgraduates and one final year undergraduate. Each Advocate normally works between 12 and 20 hours per week for SEE-U, working around individual study and learning commitments.

The Advocates are a small part of a larger team of approximately 130 enrolled students employed by the Faculty and paid hourly, to aid operational efficiency in different ways. The contribution from the student/employees is a great asset to that faculty, but this initiative has other benefits, including providing much needed financial support, practical skills training and valuable work experience for the students.

SEE-U's main activities can be divided into three types, responsive, planned and pro-active.

Many other agencies and individuals, from inside and outside the faculty, are consulted and involved as appropriate. Each item arising is recorded and followed through to completion.

> *SEE-U Responsive:* The Student Advocacy service provides a contact point for students and staff with a wide range of non-standard difficulties. The team consults and utilises appropriate channels to achieve effective and complete solutions.
>
> *SEE-U Pro-active:* The Unit conducts research, consults widely about good practice in student support matters elsewhere, organises and conducts events, surveys, interviews and focus groups to identify areas of weakness and strength in all areas of the CU student experience. The demand can arise through SEE-U's own activities or from requests to support research and activities both within and external to the Faculty.
>
> *SEE-U Planned:* A prioritised list of activities and tasks is maintained related to known problems, typically arising from the reactive and pro-active activities described above, student survey feedback, Course Consultative Committees (CCCs), staff suggestions and research. The team investi-

gates and negotiates with stakeholders about possible corrective actions with the long-term goal of encouraging systemic improvements to non-optimal or defective student-facing systems and processes.

The Academic Manager Student Experience coordinates the team's activities. Authority for agreeing and implementing changes is gained through the Associate Dean (External).

In its first four months of operation, SEE-U has proved to be useful and effective, with many staff and students making use of the services on offer. The Unit has been particularly active in supporting the evaluation of ALL pilot activities. However as with any change, the introduction of the Unit was not universally welcomed by staff, either within the faculty or elsewhere in the University. Increasingly though faculty staff are becoming aware of the benefits the Unit brings and demand for support, particularly for advocates' time, is continuing to grow beyond all expectations and stretching the limits of the team's capacity.

Where the Unit has been less active so far is in the area of planned activities for improving support systems. The SEE-U team have identified many areas and systems where intervention is overdue, but progress on most of these problems has been constrained by limited resources. However there has been one important successful systemic change, resulting from a series of problems identified from the advocacy service activities: a new procedure for managing support for disabled students has been negotiated by SEE-U in consultation with a complex network of agencies and individuals, within the faculty and centrally within the University. The new procedures have been designed, an administrator has been appointed and the new system is currently being phased in. Although it Is too early to make claims about the benefits of the new system, succeeding in reaching agreement about this rather complicated process has provided useful experience in utilising an inclusive approach to change management.

Now the Unit is established the advocates are beginning to contribute to decisions about student experience and support provision under the ALL pedagogy and in the design for the new faculty building. The future success and potential of the SEE-U contributions to any improvements and innovation depends largely on continuing to forge a common purpose with the ALL LTA advisory group and together adopting a sound approach to promoting and managing change.

Approaches to change management

Significant changes are being planned, affecting all aspects of the faculty, to accommodate the emergence and adoption of ALL. However it is increasingly apparent that the faculty should not be embarking a fixed term three year project, but instead be seizing this opportunity for an innovative new approach, leading to the development of a culture of continuous and sustained improvement.

Many models and approaches to management of change have been proposed in recent times for use in the higher education sector. In view of the scale and complexity of the task in hand, the decision has been taken to adopt a combination of different approaches in recognition that organisations are complex adaptive systems (Stacey, 1996) and that linear approaches to change management are unlikely to be effective.

It is also widely recognised that effective management of change can be facilitated by empowering, involvement and active support from and for those involved. It is important to avoid blatant imposition of changes, particularly where those affected can perceive no clear benefits. Consensus was recognised by Knoster et al as an essential component for effective management of change (Knoster, Villa, Thousand 2000). The table below illustrates this model and anticipated problems if one factor is not attended to in the change process.

Vision+	Consensus+	Skills+	Incentives+	Resources+	Action Plan	= Change
	Consensus+	Skills+	Incentives+	Resources+	Action Plan	= Confusion
Vision+		Skills+	Incentives+	Resources+	Action Plan	= Sabotage
Vision+	Consensus+		Incentives+	Resources+	Action Plan	= Anxiety
Vision+	Consensus+	Skills+		Resources+	Action Plan	= Resistance
Vision+	Consensus+	Skills+	Incentives+		Action Plan	= Frustration
Vision+	Consensus+	Skills+	Incentives+	Resources+		= Treadmill

Figure 2. Factors in managing complex change (Knoster, Villa, Thousand, 2000).

The above model demands that all six elements must be there to ensure success. To facilitate the transition to the new faculty ALL pedagogy this model (and others) are being used in a non-linear way to enable the change process. The table below illustrates how different aspects of the faculty's activities link to this model. It helps to focus attention on what is required and where gaps might cause problems as outlined above, but a simple sequential process is not assumed. This is change management through the lenses of systems thinking and complexity theory. For example as illustrated below the LTA advisory group, working with support from SEE-U, is utilising results from the on-going evaluation and reviews of the pilot ALL studies to refine the pedagogy, assessment and support provision.

Priorities/activities 2008-9	Key factor(s)
Refine vision statement/ALL definition	Vision – buy-in
Learning, Teaching and Assessment (LTA) Advisory Group continues to operate and provide oversight of ALL related pedagogic developments. Departmental representatives as change agents.	Vision, Consensus, Skills
Bottom-up funded projects continue plus others/set up Applied Research Group (ARG) in ALL	Consensus, Skills, Resources, Incentives
Staff seminars/visits to other institutions in UK and over-seas/conference attendance and paper presentation	Consensus, Action Plan
Creating (e)resources/staff development workshops	Resources, Skills
On-going action research to evaluate interventions with support from SEE-U	Consensus, Action Plan
Building space design	Resources, Action Plan
Utilisation of staff appraisal process	Skills, Incentives
Redesign administrative support services, piloting and evalua-tion, led by SEE-U	Vision, Action Plan, Consensus
Investigate good practice in employing students, including management and training provision	Vision, Skills, Action Plan, Incen-tives

Figure 3. EC priorities and activities in 2008/9 to facilitate change

The above activities aim to influence the change process largely through empowering staff and involving students but also by acknowledging that bottom-up activity is unlikely to succeed on its own and there needs to be some oversight by the LTA advisory group and the SEE-U. This oversight is to help co-ordinate and support the relevant activities including action research within the ALL pilots, and to help channel the evidence that emerges to the appropriate managers, committees and advisory groups within the faculty and university. This is to inform the on-going change process. The departmental representatives (champions) within the LTA advisory group are also vital here too. They have a change agent role within their specialist subject areas, encouraging and supporting colleagues to examine their current teaching practices and explore ways to adapt the experience for their students towards an activity led approach. They can also advise on resourcing and infrastructure requirements for the ALL pedagogy and any problems with current systems and processes.

A popular trend generally in process improvement is to adopt a lean approach to systems and processes. This has great appeal in view of the high level of unwarranted bureaucracy inherent in both faculty and central University processes.

According to Martin and Arokian (2006), although this research has focused mainly on the health sector, lean can apply equally well to higher education. In consequence, lean techniques will be included in the process remodelling activities driven by both SEE-U and the faculty advisory group. For example the redesign of student support services and administrative procedures will seek to simplify current practices, where possible focussing on the needs of the student. Coventry University's internal programme approval and curriculum design processes are likely to be another candidate here.

Another methodology considered is the Capability Maturity Model Integration for Services (CMMI-SVC), developed by the Software Engineering Institute at Carnegie Mellon University (CMMI-SVC, undated). Although this is ideally suited for promoting and developing a continuous improvement ethos, full implementation would be difficult to justify given the scale of the task at hand. However there are some interesting aspects of the model that could be applied to developments in higher education, if used selectively. Particularly, it would be a useful exercise in the transition phase to map the capability levels, using CMMI-SVC "Key Process Area" characteristics, for some functional and academic areas of the faculty. The outcomes could then be utilised to inform action plans for improvement by targeting areas assessed as less mature.

There is great enthusiasm already for ALL and its implications in parts of the faculty, but there are some areas where reluctance and scepticism predominate. Some of the more mature academic staff continue to express unwillingness to modify their teaching and assessment methods, but there are also a few pockets of negativity amongst some of the younger academic staff. It is of interest to note that the evaluation of the Laurea Learning by Developing (LbD) innovation (Vyakarnam et al, 2008, pp10, 36, 48-50) reported similar cases of denial and resistance to their initiative. In the earlier experience at Aalborg in their move to Problem Based Learning there was also considerable scepticism concerning their educational philosophy (Caspersen, 2006, pp7). There is still time and scope at Coventry University to convince many more academics of the merits of the ALL pedagogy. This in part, will rely on providing the evidence of successful implementation in those areas that are already utilising ALL and/or who are piloting and evaluating new activities. It will also depend upon shaping systems, processes, building (learning) facilities and infrastructure to ensure they are supportive of the ALL learning and teaching culture. The new EC building at Coventry is an excellent opportunity to do just this.

It is crucial that those members and parts of the Faculty not directly involved in teaching and learning activities begin to adapt to more appropriately meet the

needs of today's students, together with the move to a less conventional use of learning spaces and timetables. Any evidence of benefits from improvements to the general student support systems and structures should naturally begin to engender confidence and encouragement from all types of staff in the Faculty. SEE-U has a key role to play in this respect in promoting and encouraging the drive for the evolution of a student-focused approach in all the faculty systems and processes.

Influences far and wide, progress so far

The Faculty strategy and decisions about teaching and learning policy and details of the new building have been greatly influenced by evidence from many similar initiatives in other parts of the world, including Queen's University (Canada), University of Queensland (Australia), University of Massachusetts (USA), Strathclyde University (Scotland), Aalborg University (Denmark) and Laurea University of Applied Sciences (Finland).

In examining the practices in these different institutions one interesting aspect of great relevance to Coventry is the design and use of learning (building) facilities. Some institutions for example have bespoke facilities (e.g. Queen's) while others have modified existing buildings (learning spaces) to align to their pedagogy (e.g. Laurea). What seems to be important is that attention is paid to space and that there is a recognition that the learning (building) facilities can have a profound impact on the learning experience. Space has been identified as the 'fourth pedagogical dimension' (Kiib, 2006) and this is an important aspect of the learning experience that Engineering and Computing at Coventry will focus on as part of its planning and forms a key part of the evaluation of its pilot activities.

As discussed earlier employment of students is essential to the faculty's operation. However the SEE-U Advocacy role in particular to some extent still is viewed a controversial decision by colleagues in the faculty and elsewhere in the University. Student Advocates have access to highly confidential and sensitive information about themselves and other students. The dual student/staff status of Student Advocates means that an unprecedented amount of trust has to be placed in the integrity and honesty of individual students. Advocates therefore need to operate within certain pre-defined limits and exercise a high level of discretion. The decision to employ students with such responsibilities was based on observing similar role models operating successfully elsewhere, particularly at Boston University, UMass and PACE in the USA. On-going training and support for all the student/employees has been a key necessity for their effective

deployment in the different roles. The investment has been rewarded by evidence of their increasing skill levels and this has been particularly aided by the low turnover so far in the Advocate team.

At UMass and PACE in particular the student helpers studied were appointed in a hierarchy of roles, with senior helpers supervising the juniors, suitably rewarded financially for the additional responsibility. After only a few weeks of operating the SEE-U an advocate team leader emerged and the role is gradually developing. With the potential expansion from September 2009 of the Unit, the advocate team, and the other paid student helper roles in the Faculty, there is a need to review the distinction between different types of student/employee, the training provided to all and the internal supervision requirements.

What the future holds

The results so far from pilot studies of ALL approaches in the faculty indicate that the ALL pedagogy is generally very favourably received by students and staff alike. Areas for improvement have also been identified but these in the main, have focussed on organisational and operational issues rather the ALL learning and teaching approach itself. For example in relation to the pilot first 6 week integrative experience in mechanical and automotive engineering the students' suggestions for improvement focussed on structural, organisational and operational issues but not the style of learning which was favourably received (Green and Wilson-Medhurst, 2009). In the same pilot staff identified improved enthusiasm for study amongst students, but also recognised some struggled to maintain the 'heavy' timetabling and workload demands in later stages (Green and Wilson-Medhurst, 2009). This points to improving the design of the delivery rather than changing the style of learning.

Informal feedback from staff planning for ALL delivery indicate resource concerns particularly while the new building facilities are still under construction. Pilot delivery, studies and evaluation will continue during 2009 and beyond. The experiences of staff and students are being documented to allow other staff, inside and outside the University, to learn from these pilots. Future implementations of ALL will be modified and refined according to the findings from studying the pilot operations.

In October 2009 all undergraduate students joining the Faculty will begin with an integrative ALL experience during their first 6 weeks. The details are being decided at present and will vary between academic subjects and departments.

The definition of ALL provides for great flexibility and different interpretations, which is a deliberate decision to encourage innovation.

With the needs of non-teaching staff in mind the transitional planning activities include exploration of the feasibility of gradually expanding the number of employed students in advocacy and possibly other student-facing support roles. This would necessitate careful management of the appointment, training and supervision of the expanded student/employee team. As discussed earlier, a hierarchy of internal supervisory roles could be built into the range of available student/employee appointments.

If successfully adopted this policy could provide a cost-effective way to provide a more robust and student-centred support service than is currently in place, operated by students for students. Full time staff would benefit greatly from increased student/employee support. Support staff would spend less time responding to simple student queries and have more time to complete the essential back-office duties.

Benefits would also extend to academic staff. Current SEE-U student advocates are already beginning to develop novel specialist support skills, for example mentoring students with severe disabilities. Part of the role is to liaise with academic staff to advise and support preparation of materials in special formats, essential to the learning process. Other employed students, currently designated Interns, are assigned to academic departments in the role of teaching aide, directly supporting the academic staff and students, for example by materials preparation and administration of assessment.

SEE-U's planned activities, incorporating effective management of change, needs to begin to influence the design and development of systems and processes appropriate to serve the student-centred approach evolving in the lead-up to the move to the new building in 2011.

Conclusions

The Faculty's transition towards a more effective approach to sustainable education and development of engineering and computing students is being aided by association with many other universities who have reached different stages in the same process. Drawing on such examples and experiences is enriching and strengthening the different ideas, decisions and processes on the journey to 2011, when the new building is handed over to the faculty. In turn it is hoped

that by documenting and sharing Coventry's experience, we will be able contribute to similar developments in other places.

The target beneficiaries, for all those universities with the courage to make such changes, are the students of the future, who will be able to develop their knowledge, talents and skills in an environment that strives to understand the needs of each new generation of learners, nurturing and supporting the learning process. It is hoped that ALL and similar approaches will allow future graduates to become more informed and equipped than many current and previous students, enabling them to enjoy their learning experience and succeed, adapt and prosper in the course of their careers.

A great deal of work needs to take place in the faculty leading up to 2011 to ensure that new style courses, systems and processes are suitably tested, with time to adjust of necessary, and then phased in. There is little doubt that the whole learning community will benefit greatly from a successful move to an approach such as ALL, particularly with the availability of purpose designed learning spaces and prestigious working accommodation for staff.

The urgent challenge is the need to encourage the sceptical staff to appreciate the benefits of the ALL pedagogy itself and to embrace and exploit the opportunities presented. There is also a need to identify the resources including learning (building) space requirements and to influence relevant aspects of the new building design accordingly. The staged approach allows time for the evidence to emerge and for the ALL pedagogy and its implementation to be shaped within the various specialist subject areas that make up the faculty. Key to this is the adoption of change management methods sympathetic to this problem. This means change management through the lenses of systems thinking and complexity theory in recognition that the university, the faculty and its constituent departments are complex adaptive systems where linear approaches to change management are inappropriate and unlikely to succeed.

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